REMARKS

Claims 1-25 are pending in the present application. In the Office Action mailed July 24, 2003, the Examiner rejected claims 1, 2, 9, 10, 12, 19, and 25 under 35 U.S.C. §103(a) as being unpatentable over European patent application no. 0575082A2, hereinafter referred to as Kemppi Oy, taken with Bulwidas, Jr. (USP 4,227,066). The Examiner next rejected claims 3, 5, 13-18, 20, and 21 under 35 U.S.C. §103(a) as being unpatentable over Kemppi Oy taken with Bulwidas, Jr., and further in view of Tunnell et al. (USP 4,641,292). Claims 3, 4, and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kemppi Oy taken with Bulwidas, Jr., and further in view of Stringer (USP 4,247,752). Claims 6-8 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kemppi Oy taken with Bulwidas, Jr., and further in view of Brunner et al. (USP 6,570,132). Claims 23 and 24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kemppi Oy taken with Bulwidas, Jr., and further in view of Tabata et al. (USP 5,043,557).

Applicant has amended claim 25 to correct a typographical error. No new matter has been added.

The Examiner rejected claims 1, 2, 9, 10, 12, 19, and 25 as being unpatentable over the combination of Kemppi Oy and Bulwidas, Jr. In setting forth the rejection, the Examiner stated that "[t]he claims differ from the European patent application no. 0575082A2 in calling for the trigger associated with the transmitter to be on the electrode holder." Office Action, para 2. The Examiner acknowledged that Kemppi Oy "does not explicitly disclose how the transmitter 6 is configured with respect to the welding torch." Id. The Examiner further recognized albeit "without any explicit teaching, it would have been obvious at the time applicant' [sic] invention was made to have positioned element 6 with respect to torch 53 in any conventional fashion". Id. The Examiner also stated "it would have been obvious to have mounted transmitter 6 and its associated triggers on welding torch 53, the motivation being the teachings of Bulwidas, Jr. (4,227,066) that it is advantageous to mount remote control units on a welding torch . . . ." Id. Applicant does not dispute that it is advantageous to incorporate remote control units on a welding torch, but as set forth below, the neither reference, taken singly or in combination, teaches nor suggests that which is claimed in the present application.

Kemppi Oy teaches an apparatus "for controlling the power supply unit and/or auxiliary units of a welding machine with the help of radio-frequency signals." Col. 1, lns 1-4. More particularly, Kemppi Oy teaches coupling a radio-frequency burst signal onto the welding cable capacitively or inductively to transmit control data from a welding site to a remote power supply.

Col. 1, lns. 33-35. Specifically, Kemppi Oy teaches remote control of a power supply unit "by means of a transmitter unit 9 operating at a certain radio frequency and, tuned to the same frequency, a receiver unit 8 which is connected to control the power supply unit 3." Col. 2, lns. 17-22.

Kemppi Oy is silent, however, on what control a user has over the power supply unit. That is, although Kemppi Oy teaches that radio frequency signals may be transmitted and received over weld cables to control a power supply unit, no direct teaching or suggestion is made as to what aspects of the power supply unit the user may control. Furthermore, Kemppi Oy is silent on modes of transmitter actuation. Kemppi Oy teaches a transmitter but does not disclose any means of activating the transmitter or what triggers the transmission of control communications. Moreover, Kemppi Oy neither teaches nor suggests activation of a torch or gun trigger as prerequisite to control data transmission.

Any conclusion that the system of Kemppi Oy includes a trigger-based initiator of control communications would require the application of impermissible hindsight. That is, the cited reference makes no such teaching nor suggests such a system. While Kemppi Oy indicates that control data may be transmitted during an active welding process, the reference neither teaches nor suggests that the "depressing" a torch trigger is what initiates the transmission of control data. In fact, Kemppi Oy suggests a system that does not require user activation of a trigger that is used to commence the welding process as a trigger for the transmission of control data.

Kemppi Oy teaches a system designed to overcome the drawbacks associated with the transmission of electrical control signals in the audio-frequency range. See col. 1, lns. 8-13. Kemppi Oy indicates that a drawback of such control signals is that information transfer is not possible during an active welding process. Id. Accordingly, Kemppi Oy teaches the use of RF signals that can be transmitted during an active welding process across the weld cable. In this regard, control data can be transmitted from the welding site to a control unit, e.g. power source, while welding is taking place. One skilled in the art will appreciate, however, that a triggering mechanism on the welding torch or gun is conventionally used to commence a welding process. That is, when the trigger is depressed or otherwise activated, a welding voltage is made available at the electrode. When the electrode is placed in proximity with a workpiece, an arc is created, and welding commences. As well-known, the welding voltage will be available so long as the trigger of the welding torch or gun remains depressed or activated. As such, releasing the trigger terminates the active welding process. Therefore, by teaching a system tailored to the transmission of control data during an active welding process, the trigger of the welding gun must

already be in a depressed state. If not, the welding process is not active. As such, in one embodiment, the system disclosed by Kemppi Oy requires an active welding process to support the transmission of control data. Further, while Kemppi Oy teaches the transmission of data during "off welding", the reference neither teaches nor suggests that activation of a trigger of a welding torch is used to initiate the transmission of control data. Moreover, as set forth in claim 1, for example, the claimed invention includes a transmitter that transmits a signal indicative of desired welding operation when a trigger, designed to commence a welding process when activated, is, in fact, activated. Such a system is neither taught nor suggested by Kemppi Oy.

Recognizing that Kemppi Oy fails to teach each and every element of the claimed invention, the Examiner combined the teachings of Bulwidas, Jr. with Kemppi Oy to support a rejection under 35 U.S.C. §103. Bulwidas, Jr. teaches a "hand-held remote control unit and mounting structure for an electric welding torch" having a rotary potentiometer therein. Col. 1, lns. 55-60. A spring loaded push button is attached to the potentiometer and varies resistance of the potentiometer "in accordance with the amount of depression of the push button." Col. 1, lns. 60-66. Varying the resistance of the potentiometer changes weld current at the torch 10. See col. 3, lns. 35-40. Moreover, the control commands are transmitted from the remote control to a welding console across a control cable separate from the weld cables. See col. 4, lns. 17-23 and Fig. 1.

In contrast to the claimed invention and Kemppi Oy, Bulwidas, Jr. teaches a direct wire remote control connection to a welding console using dedicated control wires. Control wire 16 extends from the remote control unit to the welding console, and a separate weld conduit 14 extends from the torch to the weld console. See col. 4, lns. 18-23. Conversely and as set forth above, Kemppi Oy teaches remote control through at least one transmitter/receiver pair inductively or capacitively coupled to weld cables. Further, Bulwidas, Jr. teaches a microswitch 66 that controls the activation state of the control unit 15. See col. 3, lns. 24-42. An eccentric cam 62 is rotated upon movement of push button 18 to activate a contact 68 of the microswitch 66. Id. When the microswitch 66 is closed, remote control unit 15 is activated. See col. 3, lns. 32-35. Once activated, remote control unit 15 varies weld current at the torch 10 "up to the maximum setting which has been dialed into the welding machine console . . . ." Col. 3, lns. 37-39. Bulwidas, Jr. teaches varying current supplied to torch 10 through activation and resistance variation of remote control unit 15. That is, current supplied to torch 10 is varied through the use of remote control unit 15. Simply, the "trigger" of Bulwidas, Jr. is used to control weld current and does not activate or otherwise initiate a welding process.

The Examiner has characterized the "push-button" device taught by Bulwidas, Jr. as a "trigger". However, the push-button taught by the reference is not used to "trigger" a welding process. The push-button controls a potentiometer that allows an operator to control weld current during an otherwise active welding process. If the push-button is not depressed, the potentiometer is at a maximum resistance value. See col. 3, lns. 24-42. On the other hand, if the push-button is fully depressed, the potentiometer is at a minimum resistance value. Id. In either case, operator depressing of the push-button does not initiate the welding process.

In fact, the remote control taught by the cited reference requires an active welding process to be viable. That is, the push-button device is used to control weld current. A weld current is not present until the weld circuit has been closed and an arc struck. Until the arc is struck (and presuming that the power source has been powered-up) an open circuit voltage is present at the electrode. This voltage potential is then used to strike an arc when placed in proximity of a workpiece. However, until the arc is struck, there is no electron flow (current) through the weld cables. Accordingly, the current control device taught by Bulwidas, Jr. is inapplicable until an arc has been struck and a current is flowing. Only then will the potentiometer controlled by the push-button be effective. Simply, the potentiometer has nothing to regulate until after welding commences. The push-button does not initiate the welding process. In other words, welding in the system taught by Bulwidas, Jr. will be commenced and terminated independent of the push-button remote control, unlike the trigger mechanism claimed in the preset application.

In contrast to the teaching of Bulwidas, Jr., claim 1 calls for, in part, an electrode holder having a trigger that when activated commences a welding process. As stated above, Bulwidas, Jr. merely teaches modification of the current already initiated and supplied to the torch. Claim 13 calls for, in part, wire feeder having a torch connected thereto and a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch and the power source and wire feeder connected such that a voltage is not created across the weld cables until the transmitter transmits a signal to the receiver signaling that the torch has been activated. Bulwidas, Jr. does not teach does not teach a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch and to transmit a signal to the receiver signaling that the torch has been activated. Claim 19 calls for, in part, detecting activation of a triggering mechanism of a welding-type torch to initiate a welding-type process. Bulwidas, Jr. does not teach does not teach detecting activation of a triggering mechanism of a welding-type torch to initiate a welding-type

process. Claim 25 calls for, in part, a controller to regulate operation of the power source such that a voltage is not created across the weld cables until an energize secondary voltage command signal is received by the receiver from the transmitter. Bulwidas, Jr. does not teach does not teach a controller to regulate operation of the power source such that a voltage is not created across the weld cables until an energize secondary voltage command signal is received by the receiver from the transmitter.

Additionally, claim 1 calls for, in part, an electrode holder having a trigger that when activated commences a welding process, and a transmitter configured to detect activation of the trigger and responsive thereto transmit a signal indicative of desired welding operation through at least a weld cable. As stated above, the Examiner stated that "it would have been obvious to have mounted transmitter 6 and its associated triggers on welding torch 53." Office Action, para 2. Although claim 1 calls for, in part, an electrode holder having a trigger, mounting transmitter 6 and its "associated triggers" on welding torch 53 in a manner as shown in Bulwidas, Jr. as suggested by the Examiner does not transfer reference from a transmitter with "triggers" mounted on an electrode holder to a transmitter mounted on an electrode holder having a trigger. That is, mounting the transmitter as taught in Kemppi Oy to welding torch 53 in a manner as taught in Bulwidas, Jr. does not bestow "triggers" to the welding torch such that the welding torch would have a trigger and a transmitter configured to detect activation of the trigger as called for in claim 1. Attachment of a transmitter to a welding torch as taught by Bulwidas, Jr. does not integrate the transmitter sufficiently therewith such that transmitter triggers could be considered welding torch triggers. Rather, such a combination would merely result in a welding torch having a transmitter with transmitter triggers mounted thereto.

Claim 19 calls for, in part, detecting activation of a triggering mechanism of a welding-type torch to initiate a welding-type process. As stated above, neither Kemppi Oy, Bulwidas, Jr., nor the combination thereof teach or suggest detecting activation of a triggering mechanism of a welding-type torch to initiate a welding-type process. Kemppi Oy is silent on initiating a welding-type process, and Bulwidas, Jr. teaches modification of welding current -- not initiation of a welding-type process. Also, the combination of Kemppi Oy and Bulwidas, Jr. fails to teach a triggering mechanism of a welding-type torch as described above.

Claim 25 calls for, in part, a transmitter to be disposed within a wire feeder and detect activation of a welding torch. Neither Kemppi Oy, Bulwidas, Jr., nor the combination thereof teach or suggest a transmitter to be disposed within a wire feeder and detect activation of a welding torch. Kemppi Oy teaches a transmitter 6 connected to an auxiliary unit 55 for

transmitting signals to power supply unit 3 received by auxiliary unit 57 from transmitter 6 "placed to the vicinity of the welding torch." Col. 2, lns. 22-25, and see col. 4, lns. 9-19. Neither Kemppi Oy, Bulwidas, Jr., nor the combination thereof teach or suggest that mounting transmitter 6 and its associated triggers on welding torch 53 results in a transmitter to be disposed within a wire feeder and detect activation of a welding torch as called for in claim 25. Kemppi Oy teaches a transmitter connected to auxiliary unit 55 and receivers connected to auxiliary unit 57 and power supply unit 3. See Fig. 6. However, no connection is taught or suggested in Kemppi Oy between set-value transmitter 6 and welding torch 53. Kemppi Oy teaches that auxiliary unit 57 "receives control messages from a set-value transmitter 6 via a receiver 8" -- not from welding torch 53. Col. 4, lns. 9-14. Mounting transmitter 6 and its associated triggers on welding torch 53 does not convert control messages received by auxiliary unit 57 from set-value transmitter 6 into control messages received by auxiliary unit 57 from welding torch 53.

For at least the reasons above, claims 1, 19, 25, and the claims that depend therefrom are deemed patentable over the prior art.

The Examiner rejected claim 13 under 35 U.S.C. §103(a) as being unpatentable over Kemppi Oy taken with Bulwidas, Jr., and further in view of Tunnell et al. The Examiner stated that "[t]he only aspect of the claims to which the rejection [as applied to claims 1, 2, 9, 10, 12, 19, and 25] does not apply is the provision for control of particular power supply output modes." Neither Kemppi Oy, Bulwidas, Jr., Tunnell et al., nor the combination thereof teach or suggest a wire feeder having a torch connected thereto and a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch as called for in claim 13. As stated above, Kemppi Oy teaches a transmitter 6 connected to an auxiliary unit 55 for transmitting signals to power supply unit 3 received by auxiliary unit 57 from transmitter 6 "placed to the vicinity of the welding torch," and no connection is taught or suggested in Kemppi Oy between set-value transmitter 6 and welding torch 53. Col. 2, lns. 22-25, and see col. 4, lns. 9-19. As stated above, Kemppi Oy fails to teach or suggest a transmitter configured to detect activation of the torch and transmit control data when the trigger is pressed. In fact, Bulwidas, Jr.'s system requires an active process to work. That is, there is not a weld current absent an active weld arc. That is, Bulwidas, Jr. teaches varying the resistance of the potentiometer changes weld current at the torch 10. See col. 3, lns. 35-40. However, Bulwidas, Jr. fails to teach or suggest a transmitter configured to detect activation of the torch.

Tunnell et al. teaches an audio transmitter provided to a human operator "which permits the operator to adjust the welding power supply through verbal commands." Abstract. The

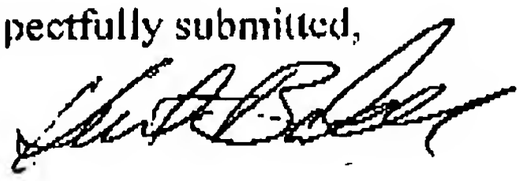
verbal commands are transmitted to a receiver connected to a voice recognition system and a computer, "which is electrically connected to deliver power control signals to the welding power supply to thereby adjust the power delivered to the welding torch." Id. Tunnell et al., when combined with Kemppi Oy and Bulwidas, Jr., fails to teach or suggest a wire feeder having a torch connected thereto and a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch as called for in claim 13. The transmitter in Tunnell et al. does not detect activation of the torch. Rather the transmitter detects audio activation by the human operator. Mounting transmitter 6 and its associated triggers on welding torch 53 does not teach a wire feeder having a torch connected thereto and a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch as called for in claim 13.

Since the Examiner has not shown how the prior art teaches or suggests a wire feeder having a torch connected thereto and a transmitter configured to detect activation of the torch and transmit a signal to a receiver of the power source indicative of activation of the torch as called for in claim 13, a case of obviousness has not been established. As such, claim 13 and the claims that depend therefrom are, therefore, deemed patentable over the prior art.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-25.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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Dated: December 8, 2004
Attorney Docket No.: ITW7510.052

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